II. Claim 9, drawn to an immunoassay method, classified in class 436, subclass 528, for example.

III. Claim 10, drawn to an immunoassay method comprising a polyclonal antibody response in an immunized animal, classified in class 436, subclass 74, for example.

IV. Claim 11, drawn to an immunoassay method comprising a monoclonal antibody present in a hydridoma supernatant, classified in class 436, subclass 548, for example.

V. Claims 12-15, drawn to an immunoassay method comprising a metal ion solution, classified in class 73, subclass 61.42, for example.

VI. Claims 16 and 18-19, drawn to an immunoassay method comprising an aqueous extract of a solid sample, classified in class 435, subclass 962, for example.

VII. Claims 17-19, drawn to an immunoassay method comprising a water sample, classified in class 435, subclass 7.1, for example.

VIII. Claims 20-21, drawn to a test kit, classified in class 435, subclass 287.2, for example.

The restriction is respectfully traversed on the ground that the methods and compositions of claims 1-21 do not differ substantively in function, mode of operation or effect, and are therefore, not patentably distinct.

It has been asserted that Claims 1-8 ("Invention I") and Claim 9 ("Invention II"), Claim 10 ("Invention III"), Claim 11 ("Invention IV"), Claims 12-15 ("Invention V"), Claims 16 and 18-19 ("Invention VI"), or Claims 17-19 ("Invention VII") are related as product and process of use. Further, it has been asserted that the inventions are distinct, in that the product can be used in a materially different process of using that product. In the instant case, it is asserted that Applicant's chelate-fluorophore tracer composition can be used as a contrasting agent. Applicant does not disclose or teach that his chelate-fluorophore tracer compositions can be used in the manner asserted nor is the undisclosed use inherent in Applicant's chelate-fluorophore tracer composition. It is known that utility as a contrasting agent is not an inherent or predictable property of an organometallic. Further, lengthy and arduous experimentation is needed to show that an organometallic is useful as a contrasting agent in that it has high stability, low toxicity, physiological tolerability, suitable pharmacokinetics, suitable biodistribution, and provides for positive imaging effect of an organ, tissue, or physiological feature, all of which are known to be characteristics and properties that are known to be required for a contrasting agent. For example, in the absence of lengthy and arduous experimentation, it is not known nor can it be predicted whether an organometallic will exhibit toxicities such as release of a toxic free metal ion, such as iron, lead, or manganese; dissociatively release the potentially toxic organic ligand; or be converted physiologically to metabolites which are more toxic than the organometallic itself. Likewise, in the absence of lengthy and arduous experimentation, it is not known nor can it be predicted that an organometallic will exhibit the orientation, orbital placement, or electronic interaction that is known to be required for utility as a contrasting agent. In view of the foregoing,

Applicant respectfully submits that the assertion is improper and requests that the inventions be rejoined.

It has been asserted that Claims 1-8 ("Invention I") and Claims 20-21 ("Invention VIII") are related as subcombination and combination. It has been asserted that Claims 20-21 are a combination because a chelating agent and biological binding agent have separate patentable utility as a chelation therapeutic. Applicant does not disclose or teach that his chelate-fluorophore tracer compositions can be used in the manner asserted nor is the undisclosed use inherent in Applicant's chelate-fluorophore tracer compositions. It is known that utility as a chelation therapeutic requires that the chelation therapeutic be able to bind an unchelated metal ion. Applicant's chelate-fluorophore tracer compositions are not capable of binding an unchelated metal ion, since a metal "M" is already resident in, liganded to, and saturates all available chelation sites of the chelate-fluorophore tracer compositions of the present invention [page 18, lines 10-25, pages 19-25, and page 26, lines 1-15, and the general formulas disclosed in Figure 1], and are not able, therefore, to bind another unchelated metal ion. Further, Applicant does not disclose or teach that his chelate-fluorophore tracer compositions can be used as contrasting agents in the manner asserted, nor is the undisclosed use inherent in Applicant's chelate-fluorophore tracer composition. It is known that utility as a contrasting agent is not an inherent or predictable property of an organometallic, and lengthy and arduous experimentation is needed to show that an organometallic has high stability, low toxicity, physiological tolerability, suitable pharmacokinetics, suitable biodistribution, and provides for positive imaging effect of an organ, tissue, or physiological feature, all of which are known to be characteristics and properties that are required for a contrasting agent. Applicant respectfully submits that the assertion is improper and requests that Inventions I and VIII be rejoined.

It has been asserted that Claim 9 ("Invention II") and Claim 10 ("Invention III") are patentably distinct because they are not disclosed as capable of use together and have different modes of operation, different functions, or different effects. In the instant case it has been asserted that the different inventions have different modes of operation, in that Claim 9 requires an aqueous solution thought to contain a biological binding agent and Claim 10 requires a polyclonal antibody response in an immunized animal and serum. It is known that the mode of operation of antibody agents is selective binding to a hapten, and it is further known that antibodies of a polyclonal nature may be obtained from animals immunized with the hapten or their sera. Applicant has discovered a method for fluorescence polarization screening of macromolecular biological binding agents that are present in the sera of immunized animals or in hybridoma supernatants and may be reactive to target metal chelates. Applicant's method is useful to characterize and track the response of the macromolecular biological binding antibody agents to target and non-target metal chelates for the purpose of identifying desirable antibody anti-chelates of the present invention, wherein the desired antibody anti-chelates are selectively responsive, more responsive or most responsive to target metal chelates and are non-responsive to non-target metal chelates, and wherein the antibody anti-chelates of the present invention further comprise polyclonal antibody anti-chelates [Section VI: page 26, lines 17-25, pages 27-30, and page 31, lines 1-10; and Section VII: page 31, lines 12-25, pages 32-34, and page 35, lines 1-15]. Applicant submits that his antibody anti-chelates and polyclonal antibody anti-chelates have the same mode of operation in that they bind selectively to target metal chelates. In view of the foregoing, Applicant respectfully requests rejoinder of inventions II and III.

It has been asserted that Claim 9 ("Invention II") and Claim 11 ("Invention IV") are patentably distinct because they are not disclosed as capable of use together and have different modes of operation, different functions, or different effects. In the instant case it has been asserted the different inventions have different modes of operation in that Claim 9 requires an aqueous

solution thought to contain a biological binding agent and Claim 11 requires a monoclonal antibody in a hybridoma supernatant. It is known that the mode of operation of antibody agents is selective binding to a hapten, and it is further known that fusions discovered by monitoring of the expression of polyclonal antibodies in an animal species or the stage and timing of expression of polyclonal antibodies in an animal species may be used to produce monoclonal antibodies to the hapten. Applicant has discovered a method for fluorescence polarization screening of macromolecular biological binding antibody agents that is useful to characterize and track the response of macromolecular biological binding antibody agents that may be reactive to target metal chelates for the purpose of identifying desirable macromolecular biological antibodies (i.e., Applicant's anti-chelates) that are selectively responsive, more responsive and most responsive to target metal chelates and non-responsive to non-target metal chelates, wherein the antibody anti-chelates further comprise monoclonal antibody anti-chelates [page 26, lines 17-25, pages 27-30, and page 31, lines 1-10; and Section VII: page 31, lines 12-25, pages 32-34, and page 35, lines 1-15]. Applicant submits that his antibody anti-chelates and monoclonal antibody anti-chelates have the same mode of operation in that they bind selectively to target metal chelates. In view of the foregoing, Applicant respectfully requests rejoinder of inventions II and IV.

It has been asserted that Claim 9 ("Invention II") and Claims 12-15 ("Invention V") are patentably distinct in that they have different modes of operation and Claim 9 requires a non-target chelate-fluorophore tracer composition, while Claims 12-15 require a metal ion solution. It is known that the mode of operation of macromolecular biological binding antibody agents is selective binding to a hapten. Applicant has discovered antibody anti-chelates of the present invention that are selectively responsive to target metal chelates and are non-responsive to non-target metal chelates in an aqueous solution containing both target metal chelates and non-target metal chelates [page 26, lines 17-25, pages 27-30, and page 31, lines 1-10; and Section VII: page 31, lines 12-25, pages 32-34, and page 35, lines 1-15]. Applicant respectfully submits that the mode

of operation of inventions II and V is the same and is selective binding of an antibody anti-chelate composition of his invention to target metal ion chelates that are present in an aqueous solution containing both target metal ion chelates and non-target metal ion chelates. In view of the foregoing, Applicant respectfully requests rejoinder of inventions II and V.

It has been asserted that Claim 9 ("Invention II") and Claims 16 and 18-19 ("Invention VI") are patentably distinct in that they have different modes of operation and Claim 9 requires a non-target chelate-fluorophore tracer composition, while Claims 16 and 18-19 require an aqueous extract of a solid sample. It is known that the mode of operation of antibody agents is selective binding to a hapten, and it is further known that antibodies of a polyclonal nature may be obtained from animals immunized with the hapten, and that fusions discovered by monitoring of the expression of polyclonal antibodies in an animal species or the stage and timing of expression of polyclonal antibodies in an animal species may be used to produce monoclonal antibodies to the hapten. Applicant has discovered antibody anti-chelates that are selectively responsive to target metal chelate compositions of the present invention and are non-responsive to non-target metal chelates that are present in an aqueous solutions containing both target metal ion chelates and non-target metal ion chelates [page 26, lines 17-25, pages 27-30, and page 31, lines 1-10; and Section VII: page 31, lines 12-25, pages 32-34, and page 35, lines 1-15]. Applicant has further disclosed that an aqueous solution containing both target metal ion chelates and non-target metal ion chelates is prepared by exposing a solid sample to a water solution [Example 5, page 46, lines 13-25, page 47, and page 48, lines 1-17]. Applicant respectfully submits that the mode of operation of both invention II and invention VI is the same and is selective binding of an antibody anti-chelate composition of his invention to a target metal chelate that is present in an aqueous solution containing both target metal chelates and non-target metal chelates. In view of the foregoing, Applicant respectfully requests rejoinder of inventions II and VI.

It has been asserted that Claim 9 ("Invention II") and Claims 17-19 ("Invention VII") are patentably distinct in that they have different modes of operation and Claim 9 requires a non-target chelate-fluorophore tracer composition, while Claims 17-19 require a water sample. It is known that the mode of operation of antibody agents is selective binding to a hapten, and it is further known that antibodies of a polyclonal nature may be obtained from animals immunized with the hapten, and that fusions discovered by monitoring of the expression of polyclonal antibodies in an animal species or the stage and timing of expression of polyclonal antibodies in an animal species may be used to produce monoclonal antibodies to the hapten. Applicant has discovered antibody anti-chelates that are selectively responsive to target metal chelate compositions of the present invention and are non-responsive to non-target metal chelates that are present in water solutions containing both target metal ion chelates and non-target metal ion chelates [page 26, lines 17-25, pages 27-30, and page 31, lines 1-10; and Section VII: page 31, lines 12-25, pages 32-34, and page 35, lines 1-15]. Applicant respectfully submits that the mode of operation of both invention II and invention VII is the same and is selective binding of an antibody anti-chelate composition of his invention to a target metal chelate that is present in a water solution containing both target metal chelates and non-target metal chelates. In view of the foregoing, Applicant respectfully requests rejoinder of inventions II and VII.

It has been asserted that Claim 9 ("Invention II") and Claims 20-21 ("Invention VIII") are related as product and process of use. Similarly, it has been asserted that this same relationship applies to Claim 10 ("Invention III") and Claims 20-21 ("Invention VIII"), Claim 11 ("Invention IV") and Claims 20-21 ("Invention VIII"), Claims 12-15 ("Invention V") and Claims 20-21 ("Invention VIII"), Claims 16, and 18-19 ("Invention VI") and Claims 20-21 ("Invention VIII"), and Claims 17-19 ("Invention VII") and Claims 20-21 ("Invention VIII"), in that the inventions embodied in Claims 9, 10, 11, 12-15, 16-18-19, or 17-19 (the product, respectively) can be used as a contrasting agent. Applicant does not disclose or teach that his chelate-fluorophore tracer compositions can be used in the

manner asserted nor is the undisclosed use inherent in Applicant's chelate-fluorophore tracer composition. It is known that utility as a contrasting agent is not an inherent or predictable property of an organometallic, and lengthy and arduous experimentation is needed to show that an organometallic has high stability, low toxicity, physiological tolerability, suitable pharmacokinetics, suitable biodistribution, and provides for positive imaging effect of an organ, tissue, or physiological feature, all of which are characteristics and properties that are known to be required for a contrasting agent. For example, in the absence of lengthy and arduous experimentation, it is not known nor can it be predicted whether an organometallic will exhibit toxicities such as release of a toxic free metal ion, such as iron, lead, or manganese; dissociatively release the potentially toxic organic ligand; or be converted physiologically to metabolites which are more toxic than the organometallic itself. Likewise, in the absence of lengthy and arduous experimentation, it is not known nor can it be predicted that an organometallic will exhibit the orientation, orbital placement, or electronic interaction that is known to be required for utility as a contrasting agent. In view of the foregoing, Applicant respectfully submits that the assertion is improper and requests that inventions II and VIII be rejoined.

It has been asserted that Claim 10 ("Invention III") and Claim 11 ("Invention IV") are patentably distinct in that they have different modes of operation in that Claim 10 requires a polyclonal antibody response in an immunized animal and serum, and Claim 11 requires a monoclonal antibody in a hybridoma supernatant. It is known that the mode of operation of antibody agents is selective binding to a hapten, and it is further known that antibodies of a polyclonal nature may be obtained from animals immunized with the hapten or their sera, and that fusions discovered by monitoring of the expression of polyclonal antibodies in an animal species or the stage and timing of expression of polyclonal antibodies in an animal species may be used to produce monoclonal antibodies to the hapten. Applicant has discovered a method for fluorescence polarization screening using target and non-target chelate-fluorophore compositions of the present invention

that is useful to characterize and track the response of macromolecular biological binding antibody agents that may be reactive to metal chelates for the purpose of identifying macromolecular biological antibody anti-chelates of the present invention that are responsive, more responsive and most responsive to target metal chelate-fluorophore tracer compositions and are non-responsive to non-target metal chelate-fluorophore tracer compositions [page 26, lines 17-25, pages 27-30, and page 31, lines 1-10; and Section VII: page 31, lines 12-25, pages 32-34, and page 35, lines 1-15]. Applicant has further disclosed that useful macromolecular biological binding antibody anti-chelates of his invention further comprise polyclonal macromolecular biological binding antibodies that are selectively responsive to target metal chelate-fluorophore tracer compositions (in other words, polyclonal antibodies that are anti-chelates of the present invention) and monoclonal macromolecular biological binding antibodies that are selectively responsive to target metal chelate-fluorophore tracer compositions (i.e., monoclonal antibodies that are anti-chelates of the present invention). In both instances, Applicant submits that the mode of operation of inventions III and IV is the same and is selective binding of the antibody anti-chelates of the present invention to target metal chelates. In view of the foregoing, Applicant respectfully requests that inventions III and IV be rejoined.

It has been asserted that Claim 10 ("Invention III") and Claims 12-15 ("Invention V") are patentably distinct in that they have different modes of operation and Claim 10 requires a polyclonal antibody response in an immunized animal and serum and Claims 12-15 require a water sample. It is known that the mode of operation of antibody agents is selective binding to a hapten, and it is further known that antibodies of a polyclonal nature may be obtained from animals immunized with the hapten or their sera. Applicant has discovered fluorescence polarization assay methods wherein the binding of macromolecular biological antibody anti-chelates of the present invention that are selectively responsive, more responsive and most responsive to target metal chelates and non-responsive to non-target metal chelates is useful for

the determination of target metal ions in water (aqueous) solution [page 26, lines 17-25, pages 27-30, and page 31, lines 1-10; and Section VII: page 31, lines 12-25, pages 32-34, and page 35, lines 1-15]. In invention III Applicant's method is used to identify and select polyclonal antibody anti-chelates of the present invention in an aqueous (water) solution and in invention V, Applicant's method is used to determine target metal ion chelates in a water solution. In both instances, Applicant submits that the mode of operation of both inventions III and V is the same and is selective binding of antibody anti-chelates of the present invention to target metal chelates that are in a water solution containing both target metal chelates and non-target metal chelates. In view of the foregoing, Applicant respectfully requests rejoinder of inventions III and V.

It has been asserted that Claim 10 ("Invention III") and Claims 16 and 18-19 ("Invention VI") are patentably distinct in that they have different modes of operation and Claim 10 requires a polyclonal antibody response in an immunized animal and serum, while Claims 16, 18-19 require an aqueous extract of a solid sample. It is known that the mode of operation of antibody agents is selective binding to a hapten, and it is further known that antibodies of a polyclonal nature may be obtained from animals immunized with the hapten or their sera. Applicant has discovered fluorescence polarization assay methods wherein the binding of polyclonal antibody anti-chelates of the present invention that are selectively responsive, more responsive and most responsive to target metal chelates and non-responsive to non-target metal chelates is useful for the determination of target metal ions in an aqueous solution [page 26, lines 17-25, pages 27-30, and page 31, lines 1-10; and Section VII: page 31, lines 12-25, pages 32-34, and page 35, lines 1-15]. Applicant has further shown that an aqueous solution of target metal chelates and non-target metal chelates is obtained by exposing a solid sample to water solution (i.e., by extracting the solid sample) and that the fluorescence polarization assay methods of the present invention may be applied to the aqueous extracts thereby obtained [Example 5, page 46, lines 13-25, page 47, and page 48, lines 1-17]. In both inventions III and VI, Applicant submits that the mode of

operation is the same and is selective binding of antibody anti-chelates of the present invention to target metal chelates that are present in an aqueous (water) solution containing both target metal chelates and non-target metal chelates. In view of the foregoing, Applicant respectfully requests rejoinder of inventions III and VI.

It has been asserted that Claim 10 ("Invention III") and Claims 17-19 ("Invention VII") are patentably distinct in that they have different modes of operation in that Claim 10 requires a polyclonal antibody response in an immunized animal and serum, and Claims 17-19 require a water sample. It is known that the mode of operation of antibody agents is selective binding to a hapten, and it is further known that antibodies of a polyclonal nature may be obtained from animals immunized with the hapten or their sera. Applicant has discovered fluorescence polarization assay methods wherein the binding of polyclonal antibody anti-chelates of the present invention that are selectively responsive, more responsive and most responsive to target metal chelates and non-responsive to non-target metal chelates that are in a water solution is useful for the determination of target metal ion chelates in the water solution containing both target metal ion chelates and non-target metal ion chelates [page 26, lines 17-25, pages 27-30, and page 31, lines 1-10; and Section VII: page 31, lines 12-25, pages 32-34, and page 35, lines 1-15]. Applicant submits that the mode of operation of inventions III and VII is the same and is selective binding of antibody anti-chelates of the present invention to target metal chelates that are present in a water solution containing both target metal chelates and non-target metal chelates. In view of the foregoing, Applicant respectfully requests rejoinder of inventions III and VII.

It has been asserted that Claim 11 ("Invention IV") and Claims 12-15 ("Invention V") are patentably distinct in that they have different modes of operation and Claim 11 requires a monoclonal antibody in a hybridoma and Claims 12-15 require a metal ion solution. It is known

that the mode of operation of antibody agents is selective binding to a hapten, and it is further known that fusions discovered by monitoring of the expression of polyclonal antibodies in an animal species or the stage and timing of expression of polyclonal antibodies in an animal species may be used to produce monoclonal antibodies to the hapten. Applicant has discovered fluorescence polarization assay methods wherein the binding of monoclonal antibody anti-chelates of the present invention that are selectively responsive, more responsive and most responsive to target metal chelates and non-responsive to non-target metal chelates in an aqueous solution is useful for the determination of target metal ions in an aqueous solution [page 26, lines 17-25, pages 27-30, and page 31, lines 1-10; and Section VII: page 31, lines 12-25, pages 32-34, and page 35, lines 1-15]. Applicant respectfully submits that the mode of operation of inventions IV and V is the same and is selective binding of antibody anti-chelates of the present invention to target metal chelates that are present in an aqueous (water) solution containing both target metal chelates and non-target metal chelates. In view of the foregoing, Applicant respectfully requests rejoinder of inventions IV and V.

It has been asserted that Claim 11 ("Invention IV") and Claims 16, 18-19 ("Invention VI") are patentably distinct in that they have different modes of operation in that Claim 11 requires a monoclonal antibody in a hybridoma supernatant, and Claims 16, 18-19 require an aqueous extract of a solid sample. It is known that the mode of operation of antibody agents is selective binding to a hapten, and it is further known that fusions discovered by monitoring of the expression of polyclonal antibodies in an animal species or the stage and timing of expression of polyclonal antibodies in an animal species may be used to produce monoclonal antibodies to the hapten. Applicant has discovered fluorescence polarization assay methods wherein the binding of monoclonal antibody anti-chelates of the present invention that are selectively responsive, more responsive and most responsive to target metal chelates and non-responsive to non-target metal chelates is useful for the determination of target metal ions in an aqueous solution [page 26, lines

17-25, pages 27-30, and page 31, lines 1-10; and Section VII: page 31, lines 12-25, pages 32-34, and page 35, lines 1-15]. Applicant has further shown that an aqueous solution of target metal chelates and non-target metal chelates is obtained by exposing a solid sample to water solution (i.e., by aqueous extraction of the solid sample) and that the fluorescence polarization assay methods of the present invention may be applied to the aqueous extracts thereby obtained [Example 5, page 46, lines 13-25, page 47, and page 48, lines 1-17]. Applicant respectfully submits that the mode of operation of inventions III and VI is the same and is selective binding of antibody anti-chelates of the present invention to target metal chelates that are present in an aqueous (water) solution containing both target metal chelates and non-target metal chelates. In view of the foregoing, Applicant respectfully requests rejoinder of inventions IV and VI.

It has been asserted that Claim 11 ("Invention IV") and Claims 17-19 ("Invention VII") are patentably distinct in that they have different modes of operation and Claim 10 requires a monoclonal antibody in a hybridoma supernatant, while Claims 17-19 require a water sample. It is known that macromolecular biological binding antibody agents are useful as affinity reagents for binding to a hapten, and it is further known that fusions discovered by monitoring of the expression of polyclonal antibodies in an animal species or the stage and timing of expression of polyclonal antibodies in an animal species may be used to produce monoclonal antibodies to the hapten. Applicant has discovered fluorescence polarization assay methods wherein the binding of monoclonal antibody anti-chelates of the present invention that are selectively responsive, more responsive and most responsive to target metal chelates and non-responsive to non-target metal chelates in a water solution is useful for the determination of target metal ions in the water solution [page 26, lines 17-25, pages 27-30, and page 31, lines 1-10; and Section VII: page 31, lines 12-25, pages 32-34, and page 35, lines 1-15]. Applicant respectfully submits that the mode of operation of inventions IV and VII is the same and is selective binding of monoclonal antibody anti-chelates of the present invention to target metal chelates that are present in water containing

both target metal chelates and non-target metal chelates. In view of the foregoing, Applicant respectfully requests rejoinder of inventions IV and VII.

It has been asserted that Claims 12-15 ("Invention V") and Claims 16, 18-19 ("Invention VI") are patentably distinct in that they have different modes of operation in that Claims 12-15 require a metal ion solution, and Claims 16, 18-19 require an aqueous extract of a solid sample. In "Webster's New Collegiate Dictionary," a publication of the G. & C. Merriam Company, Springfield, MA, U.S.A., the term "aqueous" is defined as (a) of, relating to, or resembling water, or (b) made from, with, or by water [photocopy appended as page 18]. Applicant submits that an aqueous extract of a solid sample is a solution of metal ions in water that is obtained by exposing a solid sample to water, as he has disclosed in Section VII: page 31, lines 12-25, pages 32-34, and page 35, lines 1-15. Applicant submits that the mode of operation of inventions V and VI is the same and requires an aqueous (water) solution containing metal ions. In view of the foregoing, Applicant respectfully requests that inventions V and VI be rejoined.

It has been asserted that Claims 12-15 ("Invention V") and Claims 17-19 ("Invention VII") are patentably distinct in that they have different modes of operation in that Claims 12-15 require a composition of Claim 1 and Claims 17-19 require a composition of Claim 3. Applicant has discovered chelate-fluorophore tracer compositions comprising metal-chelated reagents having the general formula disclosed in Figure 1 and Claim 1, wherein m is 0 or 1. Applicant has further disclosed that when m is 1, he provides the chelate-fluorophore tracer compositions comprising metal-chelated reagents having the general formula that is disclosed in Claim 3. Thus, Applicant's chelate-fluorophore tracer compositions of Claim 3 are also embodied in Applicant's chelate-fluorophore tracer compositions of Claim 1, when m is 1. In view of the foregoing, Applicant respectfully requests that inventions V and VII be rejoined.

It has been asserted that Claim 16, 18-19 ("Invention VI") and Claims 17-19 ("Invention VII") are patentably distinct in that they have different modes of operation and Claims 16, 18-19 require a aqueous extract of a solid sample, while Claims 17-19 require a water sample. In "Webster's New Collegiate Dictionary," a publication of the G. & C. Merriam Company, Springfield, MA, U.S.A., the term "aqueous" is defined as (a) of, relating to, or resembling water, or (b) made from, with, or by water [photocopy appended as page 18]. Applicant submits that an aqueous extract of a solid sample is a water sample that is obtained by the process of exposing a solid sample to water, as he has disclosed in Section VII: page 31, lines 12-25, pages 32-34, and page 35, lines 1-15. Applicant submits that the mode of operation of inventions VI and VII is the same and requires an aqueous (water) solution containing metal ions. In view of the foregoing, Applicant respectfully requests that the inventions be rejoined.

Applicant elects for examination Claims 12-15 (Invention V) and all inventions that may be properly rejoined thereto. Applicant respectfully draws attention to his discovery of materials and methods for measuring target metal ion chelate: anti-chelate binding by fluorescence polarization immunoassay. In the present application, he has disclosed immunoassay methods that use measures of the fluorescent signal from plane-polarized light that is obtained after target metal ion anti-chelates are exposed to target metal ion chelates and non-target metal ion chelates in aqueous solution, wherein the target metal ion antibody anti-chelates of his invention selectively bind to target metal ion chelates and do not bind to non-target metal ion chelates. Further, he has disclosed immunoassay methods that use measures of the fluorescent signal from plane-polarized light that are obtained after antibodies are exposed to chelate-fluorophore tracer compositions of his invention and has shown that these methods are useful for identifying antibodies, either of a polyclonal or a monoclonal nature, that are selectively responsive to target metal ion chelates and bind thereto and non-responsive (and non-binding) to non-target metal ion chelates. He has disclosed that antibodies exhibiting selective responsiveness to target metal ion

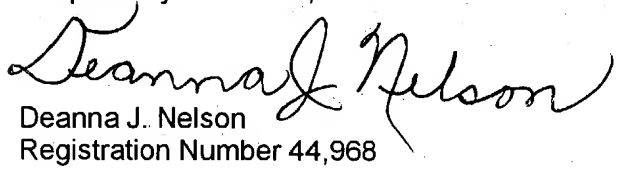
chelates are useful as anti-chelates of his invention. Likewise, he has disclosed methods for the preparation of chelate-fluorophore tracer compositions of two types: (1) target metal ion chelate-fluorophore tracer compositions in which a target metal is chelated to an organic ligand; and (2) non-target metal ion chelate-fluorophore tracer compositions in which a non-target metal is chelated to an organic ligand. Applicant respectfully requests examination of the claims that disclose his invention.

Applicant respectfully requests that if claims are allowed, the other inventions that were asserted in the Office Action of September 22, 2004, be rejoined.

Applicant respectfully submits that examination of his application has been unreasonably delayed by the Office and requests that if claims are allowed, the term of the resulting letters patent be extended by a period of time equal to that of the unreasonable delay, a period of approximately 18 months.

Should additional information be required, Deanna J. Nelson is representing Applicant before the Office. She is available by telephone at (919) 678-9478 during the hours of 8:00 AM to 4:00 PM Monday through Friday and by facsimile at (919) 678-9474.

Respectfully submitted,



Deanna J. Nelson
Registration Number 44,968

ap·ter·yx \'ap-tə-riks\ *n* [NL, fr. *a-* + Gk *pteryx* wing; akin to Gk *pteron*] : KIWI

ap·ti·tude \'ap-tə-ˌt(y)üd\ *n* **1** : capacity for learning : APTNESS **2 a** : INCLINATION, TENDENCY **b** : a natural ability : TALENT **3** : general suitability *syn* see GIFT — **ap·ti·tu·di·nal** \ˌap-tə-'t(y)üd-nəl, -ən-əl\ *adj* — **ap·ti·tu·di·nal·ly** \-ē\ *adv*

ap·y·rase \'ap-ə-ˌrās, -ˌrāz\ *n* [*adenosine* + *pyr*ophosphate + *-ase*] : any of several enzymes that hydrolyze ATP with the liberation of phosphate

aq *abbr* aqua; aqueous

aqua \'ak-wə, 'äk-\ *n, pl* **aquae** \'ak-(ˌ)wē, 'äk-ˌwī\ *or* **aquas** [L — more at ISLAND] **1** : WATER; *esp* : an aqueous solution (as of a volatile substance) **2** : a light greenish blue color

aqua·cade \'ak-wə-ˌkād, 'äk-\ *n* [*Aquacade*, a water entertainment spectacle orig. at Cleveland, Ohio (1937)] : a water spectacle that consists usu. of exhibitions of swimming and diving with musical accompaniment

Aqua·dag \-ˌdag\ *trademark* — used for a colloidal suspension of fine particles of graphite in water for use as a lubricant

aqua·for·tis \ak-wə-'fȯrt-əs, äk-\ *n* [NL *aqua fortis*, lit., strong water] : NITRIC ACID

aqua·lung·er \'ak-wə-ˌləŋ-ər, 'äk-\ *n* [fr. *Aqua-lung*, a trademark] : SCUBA DIVER

aqua·ma·rine \ak-wə-mə-'rēn, äk-\ *n* [NL *aqua marina*, fr. L, sea water] **1** : a transparent beryl that is blue, blue-green, or green in color **2** : a pale blue to light greenish blue

aqua·naut \'ak-wə-ˌnȯt, 'äk-\ *n* [L *aqua* + E *-naut* (as in *aeronaut*)] : a scuba diver who lives and operates both inside and outside an underwater shelter for an extended period

aqua·plane \'ak-wə-ˌplān, 'äk-\ *n* : a board towed behind a speeding motorboat and ridden by a person standing on it — **aqua·plane** *vi* — **aqua·plan·er** *n*

aqua pu·ra \ak-wə-'pyůr-ə, äk-\ *n* [L] : pure water

aqua re·gia \-'rē-j(ē-) ə\ *n* [NL, lit., royal water] : a mixture of nitric and hydrochloric acids that dissolves gold or platinum

aqua·relle \ak-wə-'rel, äk-\ *n* [F, fr. obs. It *acquarella* (now *acquerello*), fr. *acqua* water, fr. L *aqua*] : a drawing usu. in transparent watercolor — **aqua·rell·ist** \-'rel-əst\ *n*

aquar·ist \ə-'kwär-əst, -'kwer-\ *n* : one who keeps an aquarium

aquar·i·um \ə-'kwar-ē-əm, -'kwer-\ *n, pl* **-i·ums** *or* **-ia** \-ē-ə\ [L, watering place for cattle, fr. neut. of *aquarius* of water; fr. *aqua*] **1** : a container (as a glass tank) or an artificial pond in which living aquatic animals or plants are kept **2** : an establishment where aquatic collections of living organisms are kept and exhibited

Aquar·i·us \-ē-əs\ *n* [L (gen. *Aquarii*), lit., water carrier] **1** : a constellation south of Pegasus pictured as a man pouring water **2 a** : the 11th sign of the zodiac in astrology — see ZODIAC table **b** : one born under this sign

¹aquat·ic \ə-'kwät-ik, -'kwat-\ *adj* **1** : growing or living in or frequenting water **2** : taking place in or on water <~ sports> — **aquat·i·cal·ly** \-i-k(ə-)lē\ *adv*

²aquatic *n* **1** : an aquatic animal or plant **2** *pl but sing or pl in constr* : water sports

aqua·tint \'ak-wə-ˌtint, 'äk-\ *n* [It *acqua tinta* dyed water] : a method of etching a printing plate so that tones similar to watercolor washes can be reproduced; *also* : a print made from a plate so etched — **aquatint** *vt* — **aqua·tint·er** *n* — **aqua·tint·ist** \-əst\ *n*

aqua·vit \'äk-wə-ˌvēt\ *n* [Sw, Dan & Norw *akvavit*, fr. ML *aqua vitae*] : a clear Scandinavian liquor flavored with caraway seeds

aqua vi·tae \ak-wə-'vīt-ē, äk-\ *n* [ME, fr. ML, lit., water of life] **1** : ALCOHOL **2** : a strong alcoholic liquor

aq·ue·duct \'ak-wə-ˌdəkt\ *n* [L *aqueaeductus*, fr. *aquae* (gen. of *aqua*) + *ductus* act of leading — more at DUCT] **1 a** : a conduit for water; *esp* : one for carrying a large quantity of flowing water **b** : a structure for conveying a canal over a river or hollow **2** : a canal or passage in a part or organ

aque·ous \'ā-kwē-əs, 'ak-wē-\ *adj* [ML *aqueus*, fr. L *aqua*] **1 a** : of, relating to, or resembling water **b** : made from, with, or by water **2** : of or relating to the aqueous humor — **aque·ous·ly** *adv*

aqueous humor *n* : a limpid fluid occupying the space between the crystalline lens and the cornea of the eye

aqui·cul·ture *or* **aqua·cul·ture** \'ak-wə-ˌkəl-chər, 'äk-\ *n* [*aqua* + E *-culture* (as in *agriculture*)] **1** : the cultivation of the natural produce of water **2** : HYDROPONICS — **aqui·cul·tur·al** \ak-wə-'kəlch-(ə-)rəl, äk-\ *adj*

aqui·fer \'ak-wə-fər, 'äk-\ *n* [NL, fr. L *aqua* + *-fer*] : a water-bearing stratum of permeable rock, sand, or gravel — **aquif·er·ous** \a-'kwif-ə-rəs, ä-\ *adj*

Aq·ui·la \'ak-wə-lə\ *n* [L (gen. *Aquilae*), lit., eagle] : a northern constellation in the Milky Way southerly from Lyra and Cygnus

aq·ui·le·gia \ak-wə-'lē-j(ē-)ə\ *n* [NL] : COLUMBINE

aq·ui·line \'ak-wə-ˌlīn, -lən\ *adj* [L *aquilinus*, fr. *aquila* eagle] **1** : of, relating to, or resembling an eagle **2** : curving like an eagle's beak <an ~ nose> — **aq·ui·lin·i·ty** \ak-wə-'lin-ət-ē\ *n*

aquiv·er \ə-'kwiv-ər\ *adj* : marked by trembling or quivering <all ~ with excitement>

Ar \'är\ *n* [ME] : the letter *r*

ar *abbr* arrival; arrive

Ar *symbol* argon

AR *abbr* **1** acknowledgment of receipt **2** all rail **3** all risks **4** annual return **5** Arkansas **6** army regulation **7** autonomous republic

-ar \ər *also* ˌär\ *adj suffix* [ME, fr. L *-aris*, alter. of *-alis* -al] : of or relating to <molecul*ar*> : being <spectacul*ar*> : resembling <oracul*ar*>

Ar·ab \'ar-əb, *in sense 2 often* 'ā-ˌrab\ *n* [ME, fr. L *Arabus, Arabs*, fr. Gk *Arab-, Araps*, fr. Ar *'Arab*] **1 a** : a member of the Semitic people of the Arabian peninsula **b** : a member of an Arabic-speaking people **2** *not cap* : STREET ARAB **3** : a horse of the stock used by the natives of Arabia and adjacent regions; *specif* : a horse of a breed noted for its graceful build, speed, intelligence, and spirit — **Arab** *adj*

¹Arab *abbr* Arabian; Arabic

¹ar·a·besque \ˌar-ə-'besk\ *adj* [F, fr. It *arabesco* Arabian in fashion, fr. *Arabo* Arab, fr. L *Arabus*] : of, relating to, or being in the style of arabesque

²arabesque *n* **1** : an ornament or style that employs flower, foliage, or fruit and sometimes animal and figural outlines to produce an intricate pattern of interlaced lines **2** : a posture in ballet in which the body is bent forward from the hip on one leg with the corresponding arm extended forward and the other arm and leg backward **3** : a contrived intricate pattern of verbal expression <~s of alliteration —C. E. Montague>

arabesque 1

Ara·bi·an coffee \ə-ˌrā-bē-ən-\ *n* : COFFEE TREE 1a

Arabian horse *n* : ARAB 3

¹Ar·a·bic \'ar-ə-bik\ *adj* **1** : of, relating to, or characteristic of Arabia or the Arabs **2** : of, relating to, or constituting Arabic **3** : of or relating to Arabic numerals

²Arabic *n* : a Semitic language orig. of the Arabs of the Hejaz and Nejd that is now the prevailing speech of Arabia, Jordan, Lebanon, Syria, Iraq, Egypt, and parts of northern Africa

Arabic alphabet *n* : the alphabet of 28 letters derived from the Aramaic which is used for writing Arabic and also with adaptations for numerous other languages of Asia, Africa, and Europe of peoples professing the Muslim religion

arab·i·cize \ə-'rab-ə-ˌsīz\ *vt* **-cized; -ciz·ing** *often cap* **1** : to adapt (a language or elements of a language) to the phonetic or structural pattern of Arabic **2** : ARABIZE 1

Arabic numeral *n* : one of the number symbols 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 — see NUMBER table

arab·i·nose \ə-'rab-ə-ˌnōs, -ˌnōz\ *n* [ISV *arabin* (the solid principle in gum arabic, fr. *gum arabic* + *-in*) + *-ose*] : a crystalline aldose sugar $C_5H_{10}O_5$ of the pentose class

ara·bi·no·side \ˌar-ə-'bin-ə-ˌsīd, ə-'rab-ə-nō-ˌsīd\ *n* : a glycoside that yields arabinose on hydrolysis

Ar·ab·ist \'ar-ə-bəst\ *n* : a specialist in the Arabic language or in Arabic culture

ar·ab·ize \'ar-ə-ˌbīz\ *vt* **-ized; -iz·ing** *often cap* **1 a** : to cause to acquire Arabic customs, manners, speech, or outlook **b** : to modify (a racial or national stock) by an admixture of Arab blood **2** : ARABICIZE 1

¹ar·a·ble \'ar-ə-bəl\ *adj* [MF or L; MF, fr. L *arabilis*, fr. *arare* to plow; akin to OE *erian* to plow, Gk *aroun*] : fit for or cultivated by plowing or tillage — **ar·a·bil·i·ty** \ˌar-ə-'bil-ət-ē\ *n*

²arable *n* : land that is tilled or tillable

arach·nid \ə-'rak-nəd\ *n* [deriv. of Gk *arachnē* spider] : any of a class (Arachnida) of arthropods comprising mostly air-breathing invertebrates, including the spiders and scorpions, mites, and ticks, and having a segmented body divided into two regions of which the anterior bears four pairs of legs but no antennae — **arachnid** *adj*

¹arach·noid \ə-'rak-ˌnȯid\ *n* [NL *arachnoides*, fr. Gk *arachnoeidēs*, like a cobweb, fr. *arachnē* spider, spider's web] : a thin membrane of the brain and spinal cord that lies between the dura mater and the pia mater

²arachnoid *adj* **1** : of or relating to the arachnoid membrane **2** : covered with or composed of soft loose hairs or fibers

³arachnoid *adj* [deriv. of Gk *arachnē*] : resembling or related to the arachnids

ara·go·nite \ə-'rag-ə-ˌnīt, 'ar-ə-gə-\ *n* [G *aragonit*, fr. *Aragon*, Spain] : a mineral $CaCO_3$ consisting like calcite of calcium carbonate but differing from calcite in its orthorhombic crystallization, greater density, and less distinct cleavage — **ara·go·nit·ic** \ə-ˌrag-ə-'nit-ik, ˌar-ə-gə-\ *adj*

Ar·a·mae·an \ˌar-ə-'mē-ən\ *n* [L *Aramaeus*, fr. Gk *Aramaios*, fr. Heb *'Ărām* Aram, ancient name for Syria] **1** : a member of a Semitic people of the second millennium B.C. in Syria and Upper Mesopotamia **2** : ARAMAIC — **Aramaean** *adj*

Ar·a·ma·ic \ˌar-ə-'mā-ik\ *n* : a Semitic language known since the ninth century B.C. as the speech of the Aramaeans and later used extensively in southwest Asia as a commercial and governmental language and adopted as their customary speech by various non-Aramaean peoples including the Jews after the Babylonian exile

Aramaic alphabet *n* **1** : an extinct North Semitic alphabet dating from the ninth century B.C. which was for several centuries the commercial alphabet of southwest Asia and the parent of other alphabets (as Syriac and Arabic) **2** : the square Hebrew alphabet as distinguished from the early Hebrew alphabet

ara·ne·id \ə-'rā-nē-ˌəd, ˌar-ə-'\ *n* [deriv. of L *araneа* spider] : SPIDER 1 — **ar·a·ne·idan** \-əd-ᵊn\ *adj or n*

Arap·a·ho *or* **Arap·a·hoe** \ə-'rap-ə-ˌhō\ *n, pl* **Arapaho** *or* **Arapahos** *or* **Arapahoe** *or* **Arapahoes** : a member of an Amerindian people of the plains region ranging from Saskatchewan and Manitoba to New Mexico and Texas

ar·a·pai·ma \ˌar-ə-'pī-mə\ *n* [Pg & Sp, of Tupian origin; akin to Mura *uarapāinu* pirarucu] : PIRARUCU

ar·a·ro·ba \ˌar-ə-'rō-bə\ *n* [Pg, of Tupian origin; akin to Tupi *araribá*, a Brazilian tree] : GOA POWDER

Arau·ca·ni·an \ə-ˌraü-'kān-ē-ən, ˌar-ˌȯ-'kān-\ *also* **Arau·can** \ə-'raü-kən\ *n* [Sp *araucano*, fr. *Arauco*, province in Chile] **1** : a member of a group of Indian peoples of south central Chile and adjacent regions of Argentina **2** : the language of the Araucanian people that constitutes an independent language family — **Araucanian** *adj*

ə abut ᵊ kitten ər further a back ā bake ä cot, cart
au out ch chin e less ē easy g gift i trip ī life
j joke ŋ sing ō flow ȯ flaw ȯi coin th thin th this
ü loot u̇ foot y yet yü few yu̇ furious zh vision